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# METEOWORLD

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<b>Task Team for Lightning Observations</b> . . . . .	<b>2</b>
<b>Arab Regional Climate Outlook Forum</b> . . . . .	<b>2</b>
<b>Sowing the Seeds for Climate Action in Senegal</b> . . . . .	<b>3</b>
<b>Multi-Hazard Early Warning Systems: A Checklist</b> . . . . .	<b>4</b>

## WMO and UN Secretary-Generals meet



WMO Secretary-General Petteri Taalas met with United Nations Secretary-General António Guterres and Deputy Secretary-General Amina Mohammed on 6 March at UN Headquarters in New York. Discussions centred around climate-related issues, including the upcoming WMO Statement on the State of the Global Climate in 2017 and the provision of meteorological early warning services to the UN Operations and Crisis Centre to help in contingency planning and emergency response.

WMO is committed to strengthening cooperation with UN partners in support of the international agenda on climate change, sustainable development and disaster risk reduction. The Organization will provide scientific and technical input to the 2019 UN Global Climate Summit, which aims to mobilize stronger and more ambitious efforts to tackle climate change. In order to strengthen collaboration on water resources and hydrological management, WMO is organizing the Global Conference: Prosperity through Hydrological Services, from 7 to 9 May at its headquarters in Geneva, with several UN partner organizations. WMO is also one of the partners in the World Health Organization's (WHO) First Global Conference on Air Pollution and Health, from 30 October to 1 November, which will endeavour to cut the health and climate change impacts of air pollution.

## Regional Association VI sets Priorities

The WMO Regional Association VI (Europe) met in Geneva from 7 to 9 February to agree on priorities for future work and to elect a new President, Vice-President and Hydrological Advisor.

The meeting, which brought together delegations from 44 Members, agreed on the following top priority areas:

- The future role of National Meteorological Hydrological Services and collaboration with the private sector in the Global Weather Enterprise, focusing on the need to enhance protection of life and property
- Improving service delivery and disaster risk reduction, including development of a global multi-hazard alert and early warning system
- Capacity development through training and sharing information
- Hydrology: observation networks, data exchange and the regional implementation of the World Hydrological Observing System
- Arctic and high mountain areas: strengthening observations, research and services
- WMO Integrated Global Observing System - implementation and regional centres.

Michael Staudinger, the Permanent Representative of Austria with WMO and the Executive Director of the Central Institute for Meteorology and Geodynamics, was unanimously elected as President of the Association for the next four years, replacing Ivan Cacic of Croatia. Kornélia Radics, the Permanent Representative of Hungary with WMO and the President of the Hungarian Meteorological Service, was elected vice-president. Cristina Aliante Eklund, the Hydrological Adviser to the Permanent Representative of Sweden with WMO, was elected as Hydrological Adviser of the Association.

## Task Team for Lightning Observations

The implementation plan, *The Global Observing System for Climate: Implementation Needs*, GCOS-200, October 2016, of the Global Climate Observing System (GCOS) introduced lightning as a new Essential Climate Variable. Lightning is a proxy for severe storms and, therefore, relevant for climate monitoring. Measurements of lightning have, in recent years, become more extensive. New satellite instruments have also further enhanced their observation. In October 2017, GCOS and the WMO Commission for Climatology (CCI) established a Task Team on Lightning Observations for Climate Applications. The Task Team met for the first time in February in Washington DC to discuss a work plan, which would address opportunities and challenges of climate applications for lightning observations, observational requirements, metadata standards, and data access and exchange between the public and private sectors.

Since operational monitoring of lightning only began in the late 20th century, long term lightning time series in regard to thunderstorm activities are still limited for climate change monitoring. To fill this information gap, the Task Team started a worldwide initiative to locate thunder day observations, which are a proxy for lightning, in order to supplement the NOAA Global Surface Summary of the Day (GSOD) with thunder day data prior to 1972. The Task Team relies on the input of the respective communities for its recommendations.

As one of the first steps, a survey is planned in order to get more detailed information on existing networks and their data. For this and other efforts, the Task Team encourages the community to provide comments on any of the goals listed above. These comments can be submitted to Valentin Aich [vaich@wmo.int](mailto:vaich@wmo.int). For more information, please visit the GCOS website ([gcos.wmo.int](http://gcos.wmo.int)) or read the meeting report (1st Meeting of the GCOS/CCI Task Team on Lightning Observations for Climate Applications (TTLOCA-1), GCOS-213) in the WMO Library.

## Arab Regional Climate Outlook Forum

The League of Arab States (LAS), with support from WMO and the Economic and Social Commission for West Asia (ESCWA), organized a meeting of the Technical and Scientific Committee for the Arab Climate Outlook Forum (ArabCOF) in Cairo, Egypt, from 13 to 14 February, followed by a training workshop on sand and dust storms (SDS) in the Arab Region. The meeting addressed issues related to institutional, financial and technical aspects of the climate outlook and made decisions and recommendations to be submitted to the Permanent Committee for Meteorology of the LAS.

In particular, participants proposed to conduct two Forums per year to issue seasonal outlooks for spring and winter, alternating with online sessions for the autumn and summer outlooks. They also agreed to create a dedicated ArabCOF website within the Regional Knowledge Hub developed by the Regional Initiative for Assessment of Climate Change Impacts on Water Resources (RICCAR) Project. Key regional and national users will be engaged in the spring and winters forums. Future Forums will also be preceded by training workshops on different aspects of seasonal prediction. Participants recognized the central role of WMO Regional Climate Centres (RCCs) and discussed ways to ensure the coverage of the entire ArabCOF domain by RCC products.

The technical discussions centred on climate features and the main climate drivers for the ArabCOF region, shared the national seasonal outlooks for the coming spring, and also looked at products from RCCs,

Global Producing Centres for Long Range Forecasts (GPCLRFs), and the Lead Centre for Long Range Forecasts Multi-Model Ensemble (LC LRFMME). The Climate Predictability Tool (CPT) was introduced to participants in a short hands-on training session and the participants developed a consensus-based seasonal climate outlook.

The SDS training session was organized by the LAS with support of WMO, ESCWEA and UN Environment in collaboration with the European Organization for Exploitation of Meteorological Satellites (EUMETSAT), the State Meteorological Agency of Spain (AEMET) and the Barcelona Supercomputer Centre (BSC). The aim of the session was to enhance the technical capacities of operational and research meteorologists from the Arab States in the analysis, prediction and projection of SDS events, including the use of ground and satellite observations of dust, dust storm modelling and prediction, dust classification, and data assimilation in dust models. Participants discussed opportunities for furthering collective work in order to coordinate joint SDS activities and the priorities to fill gaps and enhance SDS technical capacities in the Arab region NMHSs. Based on these discussions, the participating international organizations looked at how they could support the SDS activities of the NMHSs in the region.

Climate experts from 8 Arab States as well as representatives from WMO, ESCWA and Gulf Cooperation Council (GCC) attended the Forum. While experts from 14 Arab States as well as from UN Convention for Combating Desertification (UNCCD) and the Burkina Faso National Meteorological Service participated in the training workshop. Both events were hosted by the Egyptian Meteorological Authority.

## Weather Radar Data Quality and Standardization

WMO and the Association of the Southeast Asian Nations (ASEAN) ran a joint Training Workshop on Weather Radar Data Quality and Standardization in Bangkok, Thailand, from 5 to 13 February. The workshop addressed the common challenges for severe weather monitoring and forecasting in Southeast Asia, where capacity-building in weather radar techniques is a crucial concern for a lot of NMHSs.

Participants learned about weather radars through theoretical and practical sessions. They attended a series of lectures which treated basics, maintenance, dual-polarization technologies, data quality control and Quantitative Precipitation Estimation methods. Hands-on training sessions covered quality control and studied a disaster event using meteorological data, including weather radars. At the end of the workshop, the participants considered concrete plans to enhance weather radar observation in their NMHSs and discussed ways to expand the regional radar network in Southeast Asia. They agreed that the network was beneficial to every NMHS and that its expansion should be achieved through regional cooperation.

Radar experts from 10 SEA NMHSs participated in the workshop, hosted by the Thai Meteorological Department (TMD) with support from Japan Meteorological Agency (JMA).

## Niger Releases First Health Climate Bulletin

In December 2017, Niger released its first Health Climate Bulletin, which was produced by the multidisciplinary Climate-Health Group. The Bulletin, which provides a co-developed climate product for the health sector, was developed with support from the Climate Services for Increased Resilience in the Sahel project, a Global Framework

for Climate Services (GFCS) initiative funded by the United States Agency for International Development (USAID).



The first edition of the Bulletin focuses on meningitis in Niger – located in the “Meningitis Belt” of Africa and regularly confronted with devastating outbreaks from various strains of the disease. Climate information can help Niger monitor the environmental suitability for meningitis outbreaks since humidity, dust and wind have been proven to be good predictors of where and when seasonal outbreaks of meningitis may occur. Regular updates on dust and wind conditions in Niger can help health authorities plan vaccination campaigns to improve the country’s coverage against this disease, especially in areas at heightened risk of an outbreak.

The Climate-Health Group is composed of nine member institutions. The Bulletin draws from data collected from Niger’s Direction de la surveillance et de la riposte aux épidémies (DSRE), Centre for Medical and Health Research (CERMES) and Direction de la Météorologie Nationale (DMN) as well as from the African Centre of Meteorological Application for Development (ACMAD). It provides an analysis of the climatic conditions as well as an epidemiological overview of Niger. The Bulletin was distributed to approximately 1 500 recipients.

## Sowing the Seeds for Climate Action in Senegal

In Senegal, cereal production is estimated to have increased by 20% in 2017 compared to 2016. Experts will investigate how much climate services contributed to this improvement in the coming years, given Senegal’s dedication to ramping up climate services in the country.

On 28 November 2017, the government of Senegal signed a decree establishing the country’s National Framework for Climate Services (NFCSS), taking Senegal one step closer to protecting its vulnerable communities from climate shocks. National frameworks coordinate the delivery of climate services to ensure that information provided to decision-makers are authoritative, dependable and tailored to user needs. This milestone was reached with support from the Climate Services for Increased Resilience in the Sahel project, a Global Framework for Climate Services (GFCS) initiative funded by USAID.

The signing of the decree paves the way for the formal launch of Senegal’s NFCSS. Following the launch, an Interministerial Council on Climate Services will be established to help ensure that science-based climate information and prediction are integrated into planning, policy and practice. Senegal’s ministries have been involved from the beginning, having participated in the country’s first National Climate Outlook Forum in June 2017. The forum brought together some 60 experts to study the country’s seasonal rain forecast and

its implications on food security, health, disaster risk management, energy and water management.

Training on climate services for various sectors is also in the pipeline for Senegal. The Senegalese Meteorological Service (ANACIM) has been working closely with the country’s various climate service user groups to ensure that their needs are met. A National Consultation identified priority interventions for agriculture, health and energy sectors, as well as the capacity development needed to implement these activities. ANACIM also benefited in July 2017 from a climate training workshop conducted by the United States National Oceanic and Atmospheric Administration (NOAA) Climate Prediction Center at the African Centre of Meteorological Applications for Development (ACMAD).

Representatives from ANACIM and the ministries of agriculture, food security, hydrology and markets meet every 10 days to jointly review the 10-day forecast and the status of the rainy season, run-off in main rivers, food security, vegetation growth and trade.

## Demonstration Phase of the Southeast Asia RCC

The Southeast Asia Regional Climate Centre Network (SEA RCC-Network) demonstration phase, which started on 7 November 2017, has opened the door for seasonal climate services and products to support the region’s NMHSs.

The SEA RCC-Network was proposed at the RAV (South-West Pacific) session held in Jakarta in May 2014. The Meteorological Service Singapore (MSS) completed the SEA RCC-Network Implementation Plan, endorsed by the RAV Management Group on March 2017, with contributions from regional partners Badan Meteorologi, Klimatologi dan Geofisika (BMKG), Indonesia and Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA). The SEA RCC-Network collectively fulfils the four mandatory functions of an RCC, namely long-range forecasting led by MSS, climate monitoring led by PAGASA, operational data services led by BMKG, and training led by all three partners. MSS is the Network coordinator.

A number of standard RCC products can be accessed through the demonstration site: [ccrs.weather.gov.sg/sea-rcc-network](https://ccrs.weather.gov.sg/sea-rcc-network). Over time, these products will be enhanced and more will be added to better meet the requirements of the region’s NMHSs. In 2018, the RCC will explore the Climate Watch System and the issuing of advisories to alert NMHSs and end users. Relevant climate anomalies for the region include heat waves, drought, or excessive rainfall.

At a later stage, the RCC will expand its work to cover climate projections as well as outlook and monitoring products on the sub-seasonal timescales. The region would also like to have finer resolution, skilful seasonal predictions; the viability of which needs to be assessed. Given the challenges in sustaining a wide spectrum of products and services, the development and operationalisation of these products needs to go hand-in-hand with other regional initiatives.

The setting up of the RCC-Network for Southeast Asia is a timely and critical development to ensure increased awareness and preparedness for climate related calamities in the region’s NMHSs. The SEA RCC-Network presents a good opportunity for pooling resources among NMHSs to enhance climate services.



## Multi-Hazard Early Warning Systems: A Checklist

WMO is pleased to announce the launching of the publication **Multi-Hazard Early Warning Systems (MHEWS): A Checklist**. This publication was prepared by the partners of the International Network for Multi-Hazard Early Warning Systems (IN-MHEWS) and is a key outcome of the first Multi-Hazard Early Warning Conference, which took place in Cancún, Mexico, in May 2017. It updates the original 2006 document *Developing Early Warning Systems: A Checklist*, developed as an outcome of the Third International Conference on Early Warning (EWC III). Through the lens of the Sendai Framework for Disaster Risk Reduction 2015-2030, the MHEWS Checklist incorporates the acknowledged benefits of multi-hazard early warnings systems, disaster risk information and enhanced risk assessments. It is anticipated that this Checklist will be further updated as technology, advances in multi-hazard early warning systems and feedback from the users are received.

Early warning is a major element of disaster risk reduction and can prevent loss of life and reduce the economic and material impacts of hazardous events, including disasters. To be effective, early warning systems need to actively involve the people and communities at risk from a range of hazards, facilitate public education and awareness of risks, effectively disseminate messages and warnings, and ensure that there is a constant state of preparedness and that early action is enabled. The MHEWS Checklist provides a simple reference list of the main components and actions for developing or evaluating early warning systems, which can easily be followed by national governments, community organizations and partners institutions within and across all sectors. It is not intended to be a comprehensive design manual, but a practical, non-technical reference tool to ensure that the major elements of an effective early warning system are in place.

The Sendai Framework recognizes the benefits of multi-hazard early warning systems and enshrines them in one of its seven global targets, notably target (g): "Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030." The Framework urges a paradigm shift in the way risk information is developed, assessed and used in multi-hazard early warning systems, disaster risk reduction strategies as well as in government policies.

### First to adapt MHEWS Checklist

The Caribbean is the first region to adopt, and adapt, the MHEWS Checklist. The Secretariat of the Climate Risks and Early Warning Systems (CREWS) Initiative shared the proposed MHEWS Checklist with the region during discussions on potential partnership (between

the WMO-led "Lessons Learned on Early Warning Systems following the Caribbean 2017 Hurricane Season" project and the Disaster Preparedness ECHO programme (DIPECHO) funded "Strengthened Integrated Early Warning Systems for more effective disaster risk reduction in the Caribbean through knowledge and tool transfer" initiative).

The Caribbean Disaster Emergency Management Agency (CDEMA) – along with its project partners, the UN Development Programme (UNDP) and the International Federation of the Red Cross (IFRC) – is now in the process of developing an Early Warning Systems Checklist to generate baseline information in five countries: Antigua and Barbuda, Dominica, Dominican Republic, Saint Lucia and St Vincent and the Grenadines.

### Newly issued

**WMO Guidelines on Generating a Defined Set of National Climate Monitoring Products**, WMO No. 1204, ISBN 978-92-63-11204-0. Available in English, French and Spanish.

**WMO Guidelines on the Calculation of Climate Normals**, WMO No. 1203, ISBN 978-92-63-11203-3. Available in English, Arabic, Chinese, French, Russian and Spanish.

**Challenges in the Transition from Conventional to Automatic Meteorological Observing Networks for Long-term Climate Records**, WMO No. 1202, ISBN 978-92-63-11202-6. Available in English, French and Spanish.

**Guidelines on the Role, Operation and Management of National Meteorological and Hydrological Services**, WMO No. 1195, ISBN 978-92-63-11195-1. Available in English.

### Upcoming events

**23 March:** World Meteorological Day Celebrations, WMO Headquarters, Geneva, Switzerland

**10-13 April:** 17th session of the Commission for Climatology (CCI-17), WMO Headquarters, Geneva, Switzerland

**18-20 April:** 17th session of the Commission for Agricultural Meteorology (CAGM-17), Incheon, Republic of Korea

**7-9 May:** HydroConference, WMO Headquarters, Geneva, Switzerland

We welcome your comments about MeteoWorld and look forward to hearing from you: [editor@wmo.int](mailto:editor@wmo.int)

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